Juvenile ‘I‘iwi Detected in Lower Elevations of Hawai‘i Volcanoes National Park

The Hawaiian islands are home to a diverse array of plants and animals found nowhere else on Earth. Among the most famous of these are the spectacular Hawaiian honeycreepers, a group that evolved from a single flock of ancestral finches into at least 54 unique species. Unfortunately, the same isolation that fostered such dramatic adaptive radiation left Hawaiian species vulnerable.

Under the onslaught of alien species predation and competition, habitat degradation, and introduced infectious diseases and parasites, most of the surviving honeycreepers have become largely confined to higher elevations. Intact habitat exists above the warm-weather range of deadly introduced avian malaria (*Plasmodium relictum*), and its mosquito vector (*Culex quinquefasciatus*).

Hawai‘i Volcanoes National Park is home to several of the remaining species of Hawaiian honeycreeper and protects thousands of acres of their native habitat. However, even within the park, native birds struggle with habitat fragmentation and degradation caused by invasive plants and animals, or volcanic activity. At elevations below about 1,500 meters they risk exposure to mosquitoes carrying the avian malaria parasite.

Consequently, species such as the iconic ‘i‘iwi (*Vestiaria coccinea*) have disappeared from much of the park, and their range has been reduced to forest fragments high on the slopes of Mauna Loa.

That's why it came as a surprise when USGS Biologist Jacqueline Gaudioso, and interns Angela Beck and Alexandria Vickery captured ‘i‘iwi in the park at ‘Ainahou (956 meters) while mist-netting.

The scientists were conducting a survey for the prevalence of avian disease and ectoparasites at ‘Ainahou for several weeks during this summer's māmane (*Sophora chrysophylla*) bloom. This endemic tree produces clusters of abundant yellow flowers, and its desirable nectar attracts nectivorous honeycreepers. The crew had captured Hawai‘i ‘amakihi (*Hemignathus virens*) and ‘apapane (*Hematione sanguinea*) in abundance (these two endemic birds are more malaria-tolerant, and can be found at lower elevations), as well as introduced birds such as Japanese white-eye (*Zosterops japonicus*). They weren't anticipating any surprises.

However, during a net run in July, 2012 the crew caught a bird with mottled plumage and a long, curved bill; a juvenile ‘i’iwi. This was exciting. Since the 1930s ‘i‘iwi have become increasingly scarce in the region, and no ‘i‘iwi had been detected near ‘Ainahou in decades. The crew captured a second juvenile ‘i‘iwi the following day.

Are these juveniles vagrants, or do they represent the young of a local pair? “It's highly unlikely that they were born in the region,” says USGS Biologist Paul Banko, who studies ‘i‘iwi in the park. “It's probable that they are dispersing young, although they would've had to go a long way.

One of two ‘i‘iwi captured at ‘Ainahou in Hawai‘i Volcanoes NP. The juveniles' cryptic plumage camouflages them in dense foliage. (Photo: J. Gaudioso)

I don't think any ‘i‘iwi are breeding below 4,000 feet (1,219 meters). There's bound to be one or two, but we're not aware of them.” The juveniles caught at ‘Ainahou may have traveled miles to get there.

It's hard to say why these juveniles would travel so far. Is it possible that they were looking for food or other ‘i‘iwi due to poor conditions where they fledged? Did they follow ‘apapane to a seasonal source of nectar? Until further research can be done, we just don't know. “ ‘I‘iwi are known to travel widely, which does put them at risk, but can also be beneficial,” says Banko. “It exposes them to disease and predation, but allows them to escape scarcity. It's a time that's fraught with peril for young birds. We're lucky they landed in this spot where there are a lot of resources. It's great we banded them. Maybe we'll see them again!” Let's hope so.

—J. Gaudioso, Biologist, USGS-PIERC
—A. Beck, U.H. Hilo

Although this is not an I&M Program project, I&M monitors landbirds every five years in the nearby East Rift Zone. We will keep our eyes and ears open for 'i'iwi when we return in 2015.